

- 12 -

CLAIMS

1. A bipolar separator plate for use in a fuel cell,
said separator plate comprising an anterior cathodic flow
5 field, a posterior anodic flow field and manifolds for flow
of reactants from the anterior cathodic flow field to the
posterior anodic flow field and from the posterior anodic
flow field to the anterior cathodic flow field.

10 2. The bipolar separator plate of claim 1 wherein the
anterior cathodic flow field is at a 90 degree angle with
respect to the posterior anodic flow field.

15 3. The bipolar separator plate of claim 1 wherein an
active manifold and a passive manifold are positioned on each
edge of the bipolar separator plate.

20 4. A fuel cell stack comprising two or more separator
plates of claim 1, said separator plates being mounted in
the fuel cell stack at a 90 degree angle with respect to
each other.